Plan-Do-Study-Act (PDSA) cycles, measuring rates of FICB before and after each cycle. The first was a departmental rounds presentation with information about the process and benefits of FICB, addressing barriers identified by surveying the group. The second cycle included a bundle of interventions comprising of an "instruction card" with the steps required to do the procedure, access to a video tutorial, and a list of experienced physicians willing to help less experienced providers perform FICB. **Evaluation/Results:** In the three months prior to the project, the rate of FICB in the ED was 12.5% (3/24). For the three months after the first PDSA cycle, the rate increased to 22.2% (8/36). Then, the second cycle was performed. In the following two months the rate further increased to 36.8% (7/19). **Discussion/Impact:** Despite the clear increase in FICB rate, these changes were not statistically significant ($p = 0.063$). Our methodology was shown to be safe and effective, and our model can be applied to other ED groups looking to increase their rates of FICB.

Keywords: acute hip fracture, fascia iliaca compartment block, quality improvement and patient safety

MP35

Targeting the opioid crisis by influencing opioid prescribing in the emergency department

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Background: Liberal prescribing of opioids is a major contributing factor to the opioid crisis. Patients who take opioids for >5 consecutive days are at greater risk of long-term use. Evidence shows that significantly more opioids are prescribed for emergency department (ED) patients with acute pain compared to amounts consumed. Guidelines recommend prescribing a 3-day supply or 10-15 tablets of opioids for patients with acute pain **Aim Statement:** By January 2020, >70% of opioid prescriptions from our ED will be for <15 tablets of morphine 5 mg equivalents. **Measures & Design:** Emergency physicians were educated on best practice of prescribing opioids for discharged patients. An electronic prescription writer was built for discharged ED patients with a pop-up reminder for quantities >15 tablets (indicating a recommended quantity of 10-15 tablets) and a pop-up reminder for quantities >30 tablets (indicating a maximum quantity of 30 tablets and recommended quantity). A feature was built to auto-populate a prescription for morphine 5 mg po q4h prn x 10 tablets to facilitate adherence to guidelines. Outcome Measure % opioid prescriptions for <15 tablets of morphine 5 mg equivalents Process Measure Amount of opioids prescribed for discharged ED patients, measured as morphine 5 mg equivalents Number of opioid prescriptions for >30 tablets of morphine 5 mg equivalents Balancing Measure Number of patients that return to ED within 7 days and receive a repeat opioid prescription. **Evaluation/Results:** Prior to implementation of the electronic prescription writer a sample audit revealed that 50% of opioid prescriptions were written for <15 tablets of morphine 5 mg equivalents. For the first three quarters of 2019, 62%, 61% and 69% of opioid prescriptions were written for <15 tablets of morphine 5 mg equivalents. Only two prescriptions during the study period were for >30 tablets of morphine 5 mg equivalents. An average number of 7 patients per quarter were given a repeat opioid prescription during a return ED visit. **Discussion/Impact:** We were successful in influencing emergency physicians to prescribe fewer opioids to discharged patients. This has the potential to avoid converting ED patients with acute pain into long-term opioid users and to avoid the diversion of unused opioid tablets.

Keywords: opioids, prescriptions, quality improvement and patient safety

MP36

Reducing utilization of unnecessary coagulation tests by emergency providers

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Background: Curbing unnecessary laboratory testing represents a significant opportunity for cost reduction in the Canadian health care system. A Choosing Wisely report cited a 31% decline in the number of tests ordered in a Canadian emergency department (ED) after implementation of recommendations. The international normalized ratio (INR) remains frequently ordered in emergency departments without an appropriate indication. **Aim Statement:** We aimed to reduce the number of INR tests completed in the St. Joseph's Healthcare Hamilton Emergency Department by 50% by April 30, 2019. **Measures & Design:** We conducted the study in an urban, academic ED employing the Epic electronic health record (EHR). We tailored interventions according to the Hierarchy of Effectiveness to address root causes revealed by analysis of our baseline ordering behaviour. Interventions included provider education around evidence-based ordering indications and removal of the INR from our "chest pain" bloodwork panel. Our outcome measure was the weekly number of INR tests completed per ED visit. Process measures included the proportion of INR tests ordered for inappropriate indications on monthly audits of 20 charts where an INR was completed. Balancing measures included average ED length of stay for patients receiving INR testing. **Evaluation/Results:** We collected outcome, process, and balancing measures through the EHR and analyzed this data using statistical process control charts. Over the nine-month study period, we decreased weekly INR tests from 248.4 to 115.0, a reduction of 56% which met criteria for special cause variation. This amounts to a cost savings of $43,008 per year. ED length of stay for patients receiving INR testing did not change significantly. **Discussion/Impact:** Our interventions were successful in realising our 50% target reduction in INR tests without an increase in ED length of stay from repeat venipuncture. This result is in keeping with similar efforts in other Canadian EDs. Our interventions could likely be spread to other settings where an INR is included as part of a "chest pain" panel. This may represent a substantial cost reduction opportunity on a national scale. Further work is needed in order to assess long term sustainability, which can be supported by employing high effectiveness mechanisms such as automation of optimal behaviour.

Keywords: choosing wisely, international normalized ratio, quality improvement and patient safety

MP37

Emergency department boarding of admitted oncology patients receiving chemotherapy

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Introduction: Emergency department (ED) boarding is associated with worse outcomes for critically ill patients. There have been mixed findings in other patient populations. The primary objective of this study was to examine predictors of prolonged ED boarding among cancer patients receiving chemotherapy who required hospital

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admission from the ED. Secondary objectives were to examine the association between prolonged ED boarding and in-hospital mortality, 30-day mortality, and hospital length of stay (LOS). **Methods:** Using administrative databases from Ontario, we identified adult (≥ 18 years) cancer patients who received chemotherapy within 30 days prior to a hospital admission from the ED between 2013 to 2017. ED boarding time was calculated as the time from the decision to admit the patient to when the patient physically left the ED. Prolonged ED boarding was defined as ≥ 8 hours. Multivariable logistic regression was used to examine predictors of prolonged ED boarding and to determine if prolonged boarding was associated with mortality. Multivariable quantile regression was used to determine the association between prolonged boarding and hospital LOS. **Results:** 45,879 patients were included in the study. Median (interquartile range (IQR)) ED LOS of stay was 11.8 (7.0, 21.7) hours and median (IQR) ED boarding time was 4.2 (1.6, 14.2) hours. 17,053 (37.2%) patients had prolonged ED boarding. Severe ED crowding was the strongest predictor of prolonged ED boarding (odds ratio: 17.7, 95% CI: 15.0 to 20.9). Prolonged ED boarding was not associated with in-hospital mortality or 30-day mortality. Median hospital LOS was over 9 hours ($p < 0.0001$) longer among patients with the longest ED boarding times. **Conclusion:** Severe ED crowding was associated with a significant increase in the odds of prolonged ED boarding. While our study demonstrated that prolonged boarding was not associated with increased mortality, further work is required to understand if ED boarding is associated with other adverse outcomes in this immunocompromised population.

Keywords: boarding, emergency medicine, oncology

MP38

The impact of physician handoffs on the outcomes of emergency department patients: a medical administrative database retrospective cohort study

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Introduction: A physician handoff is the process through which physicians transfer the primary responsibility of a care unit. The emergency department (ED) is a fast-paced and crowded environment where the risk of information loss between shifts is significant. Yet, the impact of handoffs between emergency physicians on patient outcomes remains understudied. We performed a retrospective cohort study in the ED to determine if handed-off patients, when compared to non-handed-off patients, were at higher risk of negative outcomes. **Methods:** We included every adult patient first assessed by an emergency physician and subsequently admitted to hospital in one of the five sites of the CHU de Québec-Université Laval during fiscal year 2016-17. Data were extracted from the local hospital discharge database and the ED information system. Primary outcome was mortality. Secondary outcomes were incidence of ICU admission and surgery and hospital length of stay. We conducted multilevel multivariate regression analyses, accounting for patient and hospital clusters and adjusting for demographics, CTAS score, comorbidities, admitting department delay before evaluation by an emergency physician and by another specialty, emergency department crowding, initial ED orientation and handoff timing. We conducted sensitivity analyses excluding patients that had an ED length of stay > 24 hours or events that happened after 72 hours of hospitalization. **Results:** 21,136 ED visits and 17,150 unique individuals were included in the study. Median[Q1-Q3] age, Charlson index score, door-to-emergency-physician time and ED length of stay were 71 [55-83] years old, 3[1-4], 48 [24,90] minutes, 20.8[9.9,32.7] hours, respectively. In multilevel multivariate analysis (OR handoff/no handoff [CI95%] or GMR[SE]), handoff status was not associated with mortality 0.89[0.77,1.02], surgery 0.95[0.85,1.07] or hospital length of stay (-0.02[0.03]). Non-handed-off patients had an increased risk of ICU admission (0.75[0.64,0.87]). ED occupancy rate was an independent predictor of mortality and ICU admission rate irrespectively of handoff status. Sensitivity and sub-group based analyses yielded no further information. **Conclusion:** Emergency physicians' handoffs do not seem to increase the risk of severe in-hospital adverse events. ED occupancy rate is an independent predictor of mortality. Further studies are needed to explore the impact of ED handoffs on adverse events of low and moderate severity.

Keywords: communication, handoff, retrospective cohort study

MP39

Emergency department triage redesign: can elements designed to improve department flow reduce door-to-ECG times in self-presenting ED patients suspected of myocardial infarction?

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Introduction: ST-Elevation Myocardial Infarction (STEMI) represents irreversible necrosis of myocardial tissue. Prompt time-to-reperfusion in these patients is paramount in reducing morbidity and mortality. This concept, time-to-reperfusion, is the principle focus for improving STEMI care. Prioritizing diagnosis in patients with high-risk cardiac features through rapid electrocardiogram (ECG) is essential, with gold standard time-to-ECG benchmarked at 10-minutes. While substantial literature is established for pre-hospital ECG interventions, there is a paucity of intervention data for self-presenting patients. While evaluating these times within our department, we conducted a redesign of the triage process. These included nurses becoming the first contact and the addition of an extra triage nurse. These changes provided the opportunity to evaluate whether the redesign elements of the triage system meant to improve department flow could improve other patient-centered outcomes, namely time-to-ECG. **Methods:** The first fifty self-presenting patients designated as "cardiac chest pain" in the month preceding changes to the triage system were analyzed to create a baseline time-to-ECG value. Following the alteration to our triage system, three samples of the first 50 patient's time-to-ECG were collected at two, four and six months post-intervention and compared to pre-intervention via non-paired t-test. Data was further stratified into percentages of patients receiving an ECG within 10-minute intervals starting with 0-10 minutes. Proportions pre and post intervention were then compared using z-scores. **Results:** A baseline pre-intervention time-to-ECG value of 26.6 minutes was established. Average post-intervention time-to-ECG was significantly reduced at 15.6min with a mean difference of -11.0min ± 3.0 (95% CI -16.0 – (-5.0)). Interestingly, the proportion of ECGs performed under 20 minutes rose significantly from 58% to 81% ($z=-3.2$, $p < 0.001$) while the increase in proportion of ECGs performed under 10 minutes from 26% to 37% was not statistically significant ($z=-1.4$). **Conclusion:** The results of this analysis suggest that the addition of an extra triage nurse coupled with changing first point of ED contact from the business clerks to triage nurses significantly reduced mean time-to-ECG in self-presenting patients with chest pain deemed high risk for cardiac causes. Additionally, these changes significantly

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